

1035-22-240

Jeb F. Willenbring* (jw@uwm.edu), University of Wisconsin - Milwaukee, Department of Mathematical Sciences, PO Box 413, Milwaukee, WI 53201-0413, and **Gregg J. Zuckerman** (gregg@math.yale.edu), Yale University, Mathematics Dept., PO Box 208283, New Haven, CT 06520-8283. *Combinatorics of Blattner's formula*. Preliminary report.

Let G be a connected, semisimple Lie group with finite center and let K be a maximal compact subgroup. The talk will provide an exposition of methods to compute multiplicities of K -types in the discrete series using a rational expression for a generating function obtained from Blattner's formula. This expression involves a product with a character of an irreducible finite dimensional representation of K and is valid for any discrete series system. Other results concern certain qualitative properties of Blattner's formula including a positivity theorem. The motivation for this work came from an attempt to understand pictures coming from Blattner's formula. (Received August 22, 2007)